



Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 21, 2011

Tom Colligan
Floyd Snider
601 Union Street, Suite 600
Seattle, WA 98101-2341

RE: Project: Jorgensen Forge PLO
ARI Job No: SD56

Dear Tom:

Please find enclosed analytical results and the original and a revised copy of the Chain of Custody documentation (COC) for the project referenced above. Analytical Resources, Incorporated (ARI) accepted one water sample on January 6, 2011. The samples were received in good condition.

The samples were analyzed for total metals and general chemistry parameters, as requested.

No analytical complications were noted for these analyses. Quality control results are included for your review.

A copy of the reports and all associated raw data will remain on file with ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.


Kelly Bottem
Client Services Manager
kellyb@arilabs.com
206-695-6211

Enclosures

cc: eFile SD56

KB/kb

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[illegible]

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 30 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

PRESERVATION VERIFICATION 01/06/11

Page 1 of 1



ARI Job No: SD56

PC: Kelly

VTSR: 01/06/11

Inquiry Number: NONE

Analysis Requested: 01/06/11

Contact: Ernst, Will

Client: The Boeing Company

Logged by: AV

Sample Set Used: Yes-440

Validatable Package: No

Deliverables:

Project #: BP02-BOE CMI11 Task 1.1

Project: Boeing Plant 2

Sample Site:

SDG No:

Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-298 SD56A	LDW-Stilling Well						TOT 9.57															

Checked By

AV

Date

1/6/11



Cooler Receipt Form

ARI Client: Boeing

COC No(s): _____ (NA)

Assigned ARI Job No: SD56

Project Name: Boeing Plant 2

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of cooler? YES (NO)

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 5.3

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 999411019

Cooler Accepted by: AV Date: 1/6/11 Time: 1430

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: empty bottles

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? (NA) YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: (NA)

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 1/6/11 Time: 1435

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC


Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm	Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

SAMPLE RESULTS-CONVENTIONALS
SD56-The Boeing Company



Matrix: Stormwater
Data Release Authorized: 
Reported: 01/21/11

Project: Jorgensen Forge PLO
Event: 7KPL2JOR
Date Sampled: 01/06/11
Date Received: 01/06/11


Client ID: LDW-Stilling Well
ARI ID: 11-298 SD56A

Analyte	Date Batch	Method	Units	RL	Sample
pH	01/06/11 010611#1	EPA 150.1	std units	0.01	6.73
Alkalinity	01/07/11 010711#1	SM 2320	mg/L CaCO3	1.0	55.2
Carbonate	01/07/11	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	01/07/11	SM 2320	mg/L CaCO3	1.0	55.2
Hydroxide	01/07/11	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Conductivity	01/11/11 011111#1	EPA 120.1	umhos/cm	1.00	7,400
Salinity	01/11/11 011111#1	SM 2520.B	ppt	0.10	4.00
Chloride	01/18/11 011811#1	EPA 300.0	mg/L	100	2,510
Sulfate	01/08/11 010811#1	EPA 300.0	mg/L	10.0	363

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
SD56-The Boeing Company

ANALYTICAL
RESOURCES
INCORPORATED 


Matrix: Stormwater
Data Release Authorized: 
Reported: 01/21/11

Project: Jorgensen Forge PLO
Event: 7KPL2JOR
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Conductivity	EPA 120.1	01/11/11	umhos/cm	< 1.00 U	
Salinity	SM 2520.B	01/11/11	ppt	< 0.10 U	
Chloride	EPA 300.0	01/18/11	mg/L	< 0.1 U	
Sulfate	EPA 300.0	01/08/11	mg/L	< 0.1 U	

LAB CONTROL RESULTS-CONVENTIONALS
SD56-The Boeing Company



Matrix: Stormwater
Data Release Authorized: 
Reported: 01/21/11


Project: Jorgensen Forge PLO
Event: 7KPL2JOR
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
pH EPA 150.1	ICVL	01/06/11	std. units	7.02	7.00	0.02
Salinity SM 2520.B	ICVL	01/11/11	ppt	43,300	47,600	91.0%

pH is evaluated as the Absolute Difference between the values rather than Percent Recovery.

STANDARD REFERENCE RESULTS-CONVENTIONALS
SD56-The Boeing Company




Matrix: Stormwater
Data Release Authorized: 
Reported: 01/21/11

Project: Jorgensen Forge PLO
Event: 7KPL2JOR
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity ERA #P114506	SM 2320	01/07/11	mg/L CaCO3	99.4	102	97.5%
Conductivity Ricca #3193	EPA 120.1	01/11/11	umhos/cm	993	1,000	99.3%
Chloride ERA #230109	EPA 300.0	01/18/11	mg/L	3.1	3.0	103.3%
Sulfate ERA #220109	EPA 300.0	01/08/11	mg/L	3.1	3.0	103.3%

REPLICATE RESULTS-CONVENTIONALS
SD56-The Boeing Company



Matrix: Stormwater
Data Release Authorized: 
Reported: 01/21/11

Project: Jorgensen Forge PLO
Event: 7KPL2JOR
Date Sampled: 01/06/11
Date Received: 01/06/11

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: SD56A Client ID: LDW-Stilling Well						
pH	EPA 150.1	01/06/11	std units	6.73	6.74	0.01
Alkalinity	SM 2320	01/07/11	mg/L CaCO3	55.2	55.3	0.2%
Carbonate	SM 2320	01/07/11	mg/L CaCO3	< 1.0	< 1.0	NA
Bicarbonate	SM 2320	01/07/11	mg/L CaCO3	55.2	55.3	0.2%
Hydroxide	SM 2320	01/07/11	mg/L CaCO3	< 1.0	< 1.0	NA
Conductivity	EPA 120.1	01/11/11	umhos/cm	7,400	7,400	0.0%
Salinity	SM 2520.B	01/11/11	ppt	4.00	4.00	0.0%

pH is evaluated as the Absolute Difference between the values rather than
Relative Percent Difference

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


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Sample ID: LDW-Stilling Well
SAMPLE

Lab Sample ID: SD56A

LIMS ID: 11-298

Matrix: Stormwater

Data Release Authorized: 

Reported: 01/14/11

QC Report No: SD56-The Boeing Company

Project: Jorgensen Forge PLO

7KPL2JOR

Date Sampled: 01/06/11

Date Received: 01/06/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	01/07/11	6010B	01/10/11	7440-70-2	Calcium	0.05	62.5	
3010A	01/07/11	6010B	01/10/11	7439-95-4	Magnesium	0.05	163	
3010A	01/07/11	6010B	01/10/11	7440-09-7	Potassium	0.5	53.4	
3010A	01/07/11	6010B	01/10/11	7440-23-5	Sodium	0.5	1,460	

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: SD56MB

LIMS ID: 11-298

Matrix: Stormwater

Data Release Authorized: 

Reported: 01/14/11

QC Report No: SD56-The Boeing Company

Project: Jorgensen Forge PLO

7KPL2JOR

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	01/07/11	6010B	01/10/11	7440-70-2	Calcium	0.05	0.05	U
3010A	01/07/11	6010B	01/10/11	7439-95-4	Magnesium	0.05	0.05	U
3010A	01/07/11	6010B	01/10/11	7440-09-7	Potassium	0.5	0.5	U
3010A	01/07/11	6010B	01/10/11	7440-23-5	Sodium	0.5	0.5	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: SD56LCS

LIMS ID: 11-298

Matrix: Stormwater

Data Release Authorized: 

Reported: 01/14/11

QC Report No: SD56-The Boeing Company

Project: Jorgensen Forge PLO

7KPL2JOR

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Calcium	6010B	10.1	10.0	101%	
Magnesium	6010B	10.4	10.0	104%	
Potassium	6010B	10.6	10.0	106%	
Sodium	6010B	10.7	10.0	107%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%